

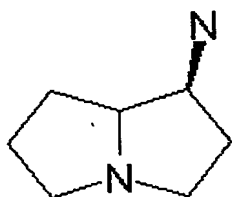
CLAIMS:

1. An antibacterial aminopyrrolizidine or alkylaminopyrrolizidine compound which is:

- 5 (a) for use in therapy or prophylaxis; and/or
 (b) in a pharmaceutical composition; and/or
 (c) in a unit dosage form; and/or
 (d) in a form suitable for local or systemic administration.

10 2. The compound of claim 1 which is a pharmaceutically acceptable derivative of loline.

3. The compound of claim 1 or claim 2 having a saturated or unsaturated (e.g. 6,7-dehydro) aminopyrrolizidine or alkylaminopyrrolizidine nucleus of formula:



15

4. The compound of claim 1 or claim 2 having a saturated or unsaturated (e.g. 6,7-dehydro) aminopyrrolizidine or alkylaminopyrrolizidine nucleus of formula:



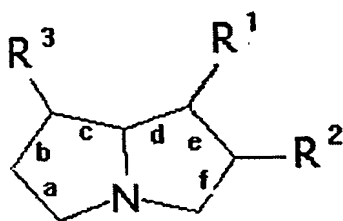
20

5. The compound of any one of claims 1 to 3 which is hydroxylated, for example being mono- or dihydroxylated (e.g. at C-2 and/or C-7).

25 6. The compound of any one of claims 1, 2 and 4 which is hydroxylated, for example being mono- or dihydroxylated (e.g. at C-1 and/or C-7).

7. A compound having the formula:

30



in which a, b, c, d, e and f indicate the location of optional C=C double bonds, provided, however, that the double bonds are not adjacent and that when one or more double bond(s) are present then the substitution patterns around such bonds do not violate double bond valency, wherein R¹ is amino or alkyl amino, R² and R³ are independently selected from hydrogen, oxo, halo, hydroxy and alkoxy and wherein the compound is:

- (a) for use in therapy or prophylaxis; and/or
- (b) in isolated or purified form; and/or
- (c) in a pharmaceutical composition; and/or
- (d) in a unit dosage form; and/or
- (e) in a form suitable for local or systemic administration,

or a pharmaceutically acceptable salt or derivative thereof.

8. The compound of claim 7 wherein the alkyl amino is C₁-C₁₀ alkyl amino (for example, C₁-C₆ alkyl amino, e.g. C₁-C₄ alkyl amino) and/or the alkoxy is C₁-C₁₀ alkoxy (for example, C₁-C₆ alkoxy, e.g. C₁-C₄ alkoxy).

9. The compound of claim 8 wherein the alkyl amino is a C₁, C₂, C₃, C₄, C₅ or C₆ alkyl amino.

10. The compound of any one of claims 7 to 9 wherein the alkoxy is a C₁, C₂, C₃, C₄, C₅ or C₆ alkoxy.

11. The compound of any one of claims 7 to 10 wherein the halo is chloro, fluoro, iodo or bromo.

12. The compound of any one of the preceding claims which is saturated.

13. The compound of any one of the preceding claims which is unsaturated.

14. The compound of claim 13 which is 1,2-dehydro-, 5,6-dehydro-, 6,7-dehydro or 7,8-dehydro.

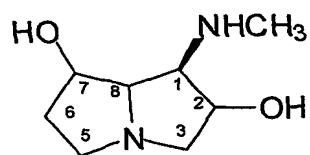
15. The compound of claim 7 wherein R² and/or R³ are hydroxy.

16. The compound of claim 15 wherein R¹ is amino.

17. The compound of claim 15 wherein R¹ is C₁ alkyl amino (methylamino).

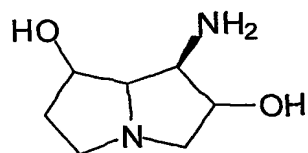
18. The compound of claim 7 which is selected from:

(a) 2,7-dihydroxy-1-methylaminopyrrolizidine:



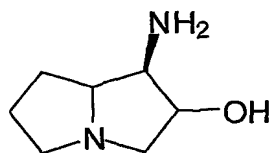
5

(b) 2,7-dihydroxy-1-aminopyrrolizidine:

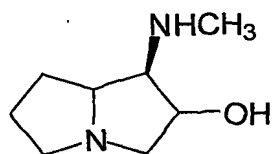


10

(c) 2-hydroxy-1-aminopyrrolizidine:

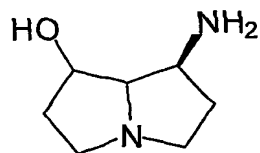


(d) 2-hydroxy-1-methylaminopyrrolizidine:



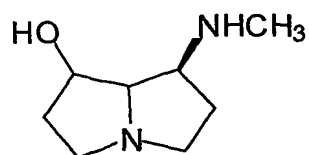
15

(e) 7-hydroxy-1-aminopyrrolizidine:



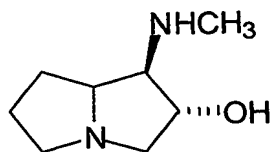
20

(f) 7-hydroxy-1-methylaminopyrrolizidine:



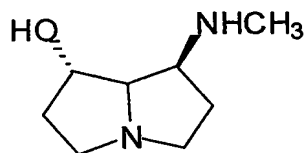
25

(g) 1 α -methylamino-2 β -hydroxypyrrolizidine:



5

(h) 1 α -methylamino-7 β -hydroxypyrrolizidine:



10

(i) 1 α -amino-2 β -hydroxypyrrolizidine;

(j) 1 α -amino-7 β -hydroxypyrrolizidine;

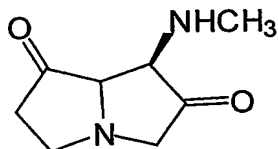
(k) 1 α -amino-2,7 β -hydroxypyrrolizidine;

(l) 1 α -methylamino-2,7 β -hydroxypyrrolizidine;

(m) 2-hydroxy-1-amino-6,7-dehydropyrrolizidine.

15

19. The compound of claim 7 wherein R¹ is C₁ alkyl amino (methylamino) and R² and R³ are oxo, having the formula:



20

20. The compound of claim 7 which is saturated and wherein R¹, R² and R³ are as shown below:

R ¹	R ²	R ³
Amino	Hydrogen	Hydrogen
Amino	Hydrogen	Oxo
Amino	Hydrogen	Hydroxy
Amino	Hydrogen	Halo
Amino	Hydrogen	Alkoxy
Amino	Oxo	Hydrogen
Amino	Oxo	Oxo
Amino	Oxo	Hydroxy
Amino	Oxo	Halo
Amino	Oxo	Alkoxy
Amino	Hydroxy	Hydrogen

Amino	Hydroxy	Oxo
Amino	Hydroxy	Hydroxy
Amino	Hydroxy	Halo
Amino	Hydroxy	Alkoxy
Amino	Halo	Hydrogen
Amino	Halo	Oxo
Amino	Halo	Hydroxy
Amino	Halo	Halo
Amino	Halo	Alkoxy
Amino	Alkoxy	Hydrogen
Amino	Alkoxy	Oxo
Amino	Alkoxy	Hydroxy
Amino	Alkoxy	Halo
Amino	Alkoxy	Alkoxy
Methylamino	Hydrogen	Hydrogen
Methylamino	Hydrogen	Oxo
Methylamino	Hydrogen	Hydroxy
Methylamino	Hydrogen	Halo
Methylamino	Hydrogen	Alkoxy
Methylamino	Oxo	Hydrogen
Methylamino	Oxo	Oxo
Methylamino	Oxo	Hydroxy
Methylamino	Oxo	Halo
Methylamino	Oxo	Alkoxy
Methylamino	Hydroxy	Hydrogen
Methylamino	Hydroxy	Oxo
Methylamino	Hydroxy	Hydroxy
Methylamino	Hydroxy	Halo
Methylamino	Hydroxy	Alkoxy
Methylamino	Halo	Hydrogen
Methylamino	Halo	Oxo
Methylamino	Halo	Hydroxy
Methylamino	Halo	Halo
Methylamino	Halo	Alkoxy
Methylamino	Alkoxy	Hydrogen
Methylamino	Alkoxy	Oxo
Methylamino	Alkoxy	Hydroxy
Methylamino	Alkoxy	Halo
Methylamino	Alkoxy	Alkoxy
Alkylamino	Hydrogen	Hydrogen
Alkylamino	Hydrogen	Oxo
Alkylamino	Hydrogen	Hydroxy

Alkylamino	Hydrogen	Halo
Alkylamino	Hydrogen	Alkoxy
Alkylamino	Oxo	Hydrogen
Alkylamino	Oxo	Oxo
Alkylamino	Oxo	Hydroxy
Alkylamino	Oxo	Halo
Alkylamino	Oxo	Alkoxy
Alkylamino	Hydroxy	Hydrogen
Alkylamino	Hydroxy	Oxo
Alkylamino	Hydroxy	Hydroxy
Alkylamino	Hydroxy	Halo
Alkylamino	Hydroxy	Alkoxy
Alkylamino	Halo	Hydrogen
Alkylamino	Halo	Oxo
Alkylamino	Halo	Hydroxy
Alkylamino	Halo	Halo
Alkylamino	Halo	Alkoxy
Alkylamino	Alkoxy	Hydrogen
Alkylamino	Alkoxy	Oxo
Alkylamino	Alkoxy	Hydroxy
Alkylamino	Alkoxy	Halo
Alkylamino	Alkoxy	Alkoxy

21. The compound of claim 7 which is unsaturated and wherein R¹, R² and R³ are as shown in the table of claim 20.

5

22. The compound of claim 21 which is 1,2-dehydro-, 5,6-dehydro-, 6,7-dehydro or 7,8-dehydro.

23. The compound of any one of claims 20 to 22 wherein the alkoxy is C₁, C₂, C₃, C₄, C₅ or C₆ alkoxy.

10

24. The compound of any one of claims 20 to 23 wherein the alkylamino is C₁, C₂, C₃, C₄, C₅ or C₆ alkylamino.

25. The compound of any one of claims 20 to 24 wherein the halo is chloro, fluoro, iodo or bromo.

15

26. A method of treating or preventing a bacterial infection comprising administering to a patient in need thereof a therapeutically effective amount of the compound as defined in any one of the preceding claims.

27. The method of claim 26 wherein the bacterial infection comprises infection with a Gram-positive bacterium.

28. The method of claim 27 wherein the Gram-positive bacterium is a low G+C Gram-positive bacterium.

20

29. The method of claim 28 wherein the low G+C Gram-positive bacterium is a *Staphylococcus* spp. or a *Bacillus* spp..

30. The method of claim 29 wherein the *Staphylococcus* spp. is *S. aureus* or *S. epidermidis*).

31. The method of claim 29 wherein the *Staphylococcus* spp. is MRSA, for example selected from any of C-MSRA1, C-MRSA2, C-MRSA3, C-MSRA4, Belgian MRSA, Swiss MRSA and any of the EMRSA strains.

32. The method of claim 29 wherein the *Bacillus* spp. is *Bacillus anthracis*.

33. Use of the compound as defined in any one of claims 1 to 25 for the manufacture of a medicament for use as an antibacterial agent.

34. A process for the manufacture of an antibacterial agent characterized in the use of the compound as defined in any one of claims 1 to 25.

35. The use of claim 33 or process of claim 34 wherein the antibacterial agent is for use as defined in any one of claims 26 to 32.

36. A composition comprising the compound as defined in any one of claims 1 to 25 in combination with:

- (f) an antimicrobial (e.g. antibacterial) agent; and/or
- (g) an antiviral agent; and/or
- (h) an anti-inflammatory; and/or
- (i) an analgesic; and/or
- (j) an immunostimulant.

37. A pharmaceutical kit of parts comprising the compound as defined in any one of claims 1 to 25, optionally in combination with any or all of the adjunctive therapeutic agents defined in claim 36 (a)-(e).

38. The kit of claim 37 further comprising instructions for use in antibacterial treatment or prophylaxis.

39. Surgical material comprising the compound as defined in any one of claims 1 to 25.

40. The material of claim 39 selected from:

- (a) a wound dressing;
- (b) an implant;
- (c) a disinfectant scrub, wipe or lotion;
- (d) a surgical glove;
- (e) a catheter, probe, stent, scalpel, needle, drain, surgical clip, suture or staple.

41. A method for sterilizing or cleaning surgical material comprising application of the compound as defined in any one of claims 1 to 25.